

## ABSTRACT

Briefly, in accordance with one embodiment of the invention, a light emitting device may comprise a microresonator having an annular structure such as a ring or a disk to recirculate light at a desired wavelength formed on a silicon substrate. A waveguide may be disposed on the silicon substrate to couple with the microresonator. The microresonator may be formed with silicon or silicon-germanium nanocrystals in silicon dioxide and rare earths such as erbium or ytterbium. The light emitting device may be monolithically fabricated using a standard silicon process.